

CS18-01S100-05-1

Rev. 3-2026
RoHS3 & REACH
Surface Mount Speakers



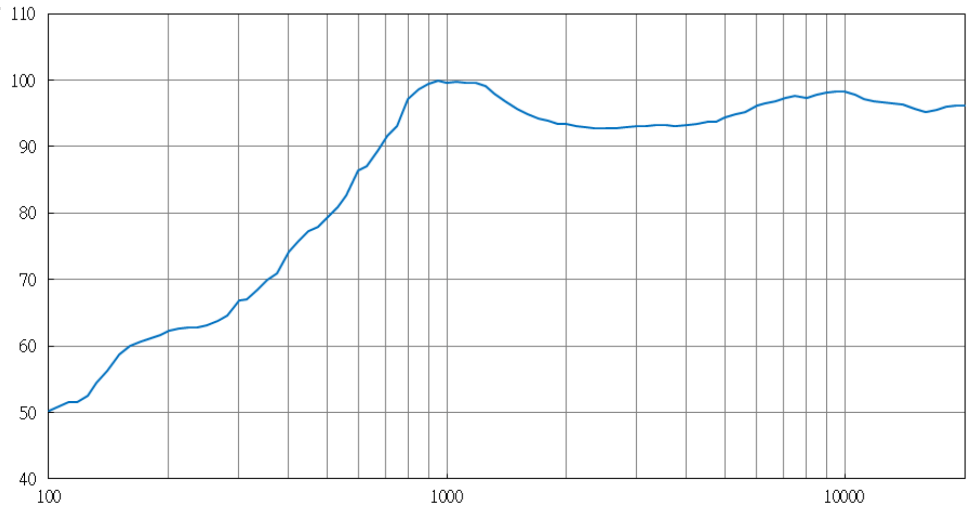
Operating Characteristics

ELECTRICAL

Rated Power	1.0 W
Short Term Max Power	1.5 W
Impedance	8 Ω \pm 15 % 2000 Hz; 1 W

ACOUSTIC: Baffle Board

f_o	1,000 Hz \pm 20 % 1 W
Freq. Range	800 to 20000 Hz
Rated SPL	97 \pm 3 dB 1000, 1200, 1500, 2000 Hz; AVG; 1 W; 10 cm
Distortion	Max 5 % 2000 Hz; 1 W



Physical Characteristics

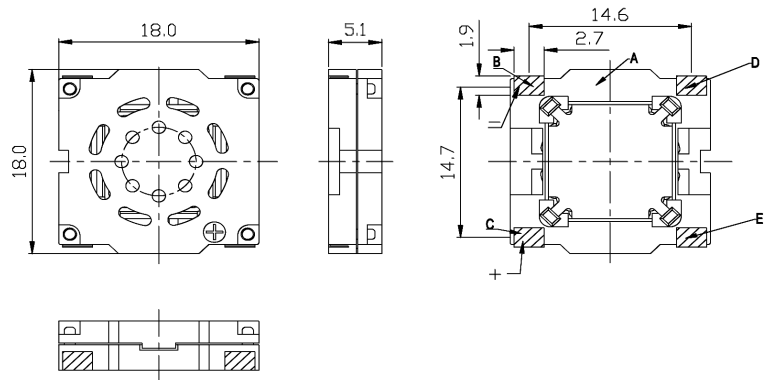
MATERIALS

Housing	LCP
Cone	PI
Magnet	SmCo
Solder Pads	Tin Plated Copper

TEMPERATURE RANGES

Operating	-40 to +85 $^{\circ}$ C
Storage	-40 to +90 $^{\circ}$ C

Weight 3 g



Coplanarity with respect to A as a standard
, B, C, D, E tolerance is 0~+0.1mm

General tolerance = \pm 0.3 mm and all measurements in mm unless otherwise noted.

Revision	Description	By	Date
2-2024	Updated resonant frequency and frequency range.	SK	2024-02-22
3-2026	Updated to include TS Parameters and XMAX value.	KG	2026-04-05

Warranty: For a period of one (1) year from date of shipping under normal operations conditions. This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair.

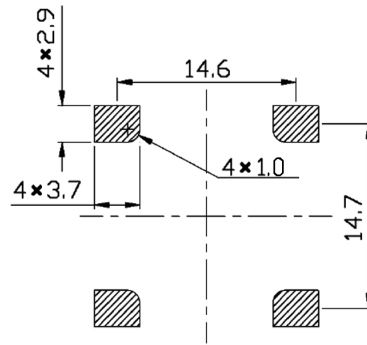
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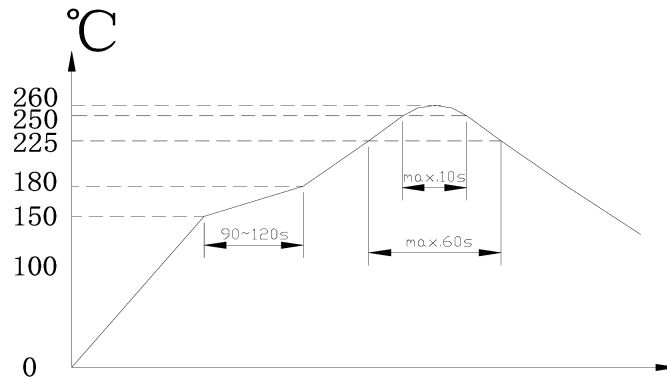
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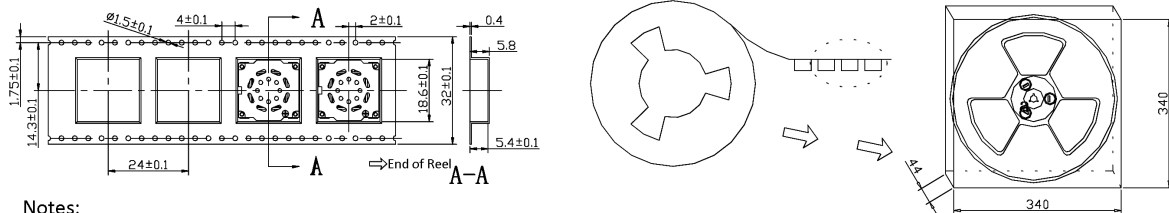
Recommended Footprint



Recommended Reflow Profile



Tape & Reel Packaging



Notes:

1. Empty Cells: Front - 8, Back - 12
 2. 500 pcs per reel, 5 reels in box.
- Total 2500 pcs.

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Thiele Small Parameters

Electrical Parameters	Value	Unit	Description
R_e	7.84	Ohm	electrical voice coil resistance at DC
L_e	0.05	mH	frequency independent part of voice coil inductance
L_2	0.005	mH	para-inductance of voice coil
R_2	0.68	Ohm	electrical resistance due to eddy current losses
C_{mes}	176.23	μF	electrical capacitance representing moving mass
L_{ces}	0.14	mH	electrical inductance representing driver compliance
R_{es}	8.22	Ohm	resistance due to mechanical losses
f_s	1029	Hz	driver resonance frequency
Mechanical Parameters	Value	Unit	Description
M_{ms}	0.083	g	mechanical mass of driver diaphragm assembly including air load and voice coil
$M_{md} (S_d)$	0.08	g	mechanical mass of voice coil and diaphragm without air load
R_{ms}	0.058	kg/s	mechanical resistance of total-driver losses
C_{ms}	0.287	mm/N	mechanical compliance of driver suspension
K_{ms}	3.48	N/mm	mechanical stiffness of driver suspension
Bl	0.688	N/A	force factor (Bl product)
λ_{s}	0.076	N/A	suspension creep factor
Loss Factors	Value	Unit	Description
Q_{tp}	4.572	N/A	total Q-factor considering all losses
Q_{ms}	9.361	N/A	mechanical Q-factor of driver in free air considering R_{ms} only
Q_{es}	8.937	N/A	electrical Q-factor of driver in free air considering R_e only
Q_{ts}	4.572	N/A	total Q-factor considering R_e and R_{ms} only
Other Parameters	Value	Unit	Description
V_{as}	0.0015	l	equivalent air volume of suspension
η_0	0.018	%	reference efficiency (2 pi-radiation using R_e)
L_m	74.64	dB	characteristic sound pressure level (SPL at 1m for 1W @ R_e)
L_{nom}	81.01	dB	nominal sensitivity (SPL at 1m for 1W @ Z_n)
$rmse Z$	1.16	%	root-mean-square fitting error of driver impedance $Z(f)$
$rmse H_x$	2.8	%	root-mean-square fitting error of transfer function $H_x(f)$
Series resistor	0	Ohm	resistance of series resistor
S_d	1.92	cm ²	diaphragm area
X_{MAX}	0.4	mm	maximum one-way linear excursion of a speaker cone before distortion increases

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